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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
KISHORE, GOLLAMUDI S	
ART UNIT	**PAPER NUMBER**
1615	

DATE MAILED: 01/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/851,606	CHOWDHARY ET AL.	
	Examiner	Art Unit	
	Gollamudi S. Kishore, Ph.D	1615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 November 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28 and 30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-28 and 30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

The amendment dated 11-17-05 is acknowledged.

Claims included in the prosecution are 1-28 and 30.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-28 and 30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicant amends claims 1 and 4 to read, "upon hydration with an aqueous medium, said complex is " and then recites as Markush members, micelles, vesicles, emulsion and gel. It is unclear as to how just a Hydration of the powder would result in different products claimed. One can understand hydration resulting one specific product. Steps leading to the formation of different products are missing in the claim.

Applicant amends claims 1-4 to indicate that hydration of the composition forms a complex. This will not overcome the rejection since it does not address the issue. Micelles, vesicles, emulsion and matrix are different forms of the final product and the issue here is how one can accomplish the formation of different products with a single step of hydration. The rejection is maintained.

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11

F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 4-7, 16-18, 26-28 and 30 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-13 of U.S. Patent No. 6,693,093. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims in instant application and the patented claims (1-12) are drawn to the same method of preparation of the photosensitizer composition. Patented claims are generic with respect to the photosensitizer and the block polymer and therefore, instant species of 'polypyrrolic macrocyclic photosensitizer' and 'triblock polymer are deemed to be anticipated by the genus in the patented claims. Although patented independent claim 1 does not recite a solid support as recited in instant claims, since the patented claims recite 'comprising' it would be obvious to one of ordinary skill in the art such a support could be used in the method as also obvious from the patented dependent claim 10 which recites a solid support. With regard to claim 30: both patented claim and instant claim 30 are drawn to the same method of conducting photodynamic therapy using the hydrated complex and these are dependent claims and therefore, the same rationale is applicable.

Applicant indicates that a terminal disclaimer will be filed. The rejection is maintained in abeyance.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-28 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schneider (6,258,378) by itself or in combination with Lyons (5,616,342) and Young (6,375,930).

Schneider discloses formulations containing liposomes and an active agent (diagnostic and therapeutic agents) in combination with polymers such as Pluronic F-108 and poloxamer. The method of preparation involves mixing the active agent with the emulsifying agent, poloxamer or Pluronic F-108 and the phospholipids such that the emulsifying agent is inside and outside the liposomes. The compositions are in a dried form and contain cryoprotectant such as sucrose (endo and exo-support) (abstract, col. 2, line 50 through col. 6, line 7, col. 7, lines 1-4 and 51-56, Examples and claims). What is lacking in Schneider is the teaching that the therapeutic agent or the diagnostic agent be a photosensitizer. However, it would have been obvious to one of ordinary skill in the art to encapsulate any active agent including a photosensitizer, with a reasonable

expectation of success since Schneider teaches general applicability of the system to any agent and provides guidance to one of ordinary skill in the art.

Lyons discloses emulsion formulations containing photosensitizers such as claimed texaphyrins and sapphyrins and block copolymers such as poloxamers (abstract, col. 3, line 10 through col. 8, line 22 and claims).

Young discloses that photodynamic therapy could be practiced with photosensitizing material in carriers such as micelles and liposomes (abstract, col. 11, line 33 through col. 13, line 43).

One of ordinary skill in the art would be further motivated to use Schneider's composition to deliver a photosensitizer since the references of Lyons, and Young show the routine practice in the art of the use of poloxamers containing emulsion systems, micelles and liposomes for the delivery of photosensitizers.

Note: The methodology used by Schneider in 6,258,378 for preparing the dried powder in the presence of sucrose is disclosed in Schneider (4,29, 360), which has been cited of interest before (note abstract, col. 2, line 18).

Applicant's arguments have been fully considered, but are not found to be persuasive. Applicant argues that there is no motivation to combine since Schneider reference teaches formulations comprising an aqueous suspension of gas-filled microspheres and liposomes filled with a bioactive substance. The formulation according to applicant is delivered to a target site, followed by application of ultrasound pulses to the site, causing the gas in the microsphere to explode and releasing the drug at the target site. Applicant argues that Schneider does not relate to photosensitizers at

all. These arguments are not found to be persuasive since instant claims 1-28 are composition and method of preparation claims and not method of delivery claims. Therefore, the mechanism by which the active agent is delivered is not pertinent. The language in instant method of delivery claim 30 does not exclude the release of the photosensitizer by explosion of the liposomes thereby releasing the active agent. Instant claims also do not exclude the presence of gas in the liposomes. With regard to applicant's arguments that Schneider does not teach photosensitizers, the examiner points out that Schneider teaches on col. 3, lines 2-5 the applicability of the liposomes for the delivery of 'therapeutically or diagnostically useful agent. Since photosensitizers are therapeutic agents, one of ordinary skill in the art would be motivated to use photosensitizers of Lyons and Young in Schneider. Applicant argues that even if combined, the combination fails to teach all the elements and that in particular, the combination fails to teach a dried photosensitizer-carrier composition comprising a mixture of a polypyrrolic macrocyclic photosensitizer and a copolymer carrier that is physically associated with a solid support. This argument is not persuasive since Schneider teaches dried preparations containing the polymer Pluronic F-108 and the solid support, sucrose just as in instant invention. Furthermore, Lyons teaches poloxamers also. With regard to applicant's arguments that Schneider and Lyons only teach the use of poloxamers as surfactants or emulsion stabilizers, the examiner points out that the motivation to use a compound in a composition need not be the same as applicants. Furthermore, one of the final products claimed in instant claim 1 is an emulsion. Applicant argues that even if combined, there is no reasonable expectation of

success since block copolymers were not expected to be useful as such because of the greater difficulty in controlling and maintaining particle size during manufacturing and storage. This argument is not persuasive since the reference of Schneider, which uses dried formulations show the 'reasonable expectation of success'. Furthermore, instant claims are drawn even to gels and matrix, which do not involve particles.

5. Claims 1-10, 16-28 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lyons (5,616,342) in combination with Klaveness (5,674,468), See (6,015,576) individually or in combination.

Lyons as pointed out above, discloses emulsion formulations containing photosensitizers and poloxamer or Pluronic F 127 (abstract, col. 4, lines 44-65 and Example 1). What is lacking in McCarty is the teaching of the preparation of the composition in a dried form in the presence of solid supports such as lactose.

Klaveness while disclosing emulsion formulations containing Pluronics teaches that the emulsions can be lyophilized in the presence of lactose to prepare dried forms (col. 40, lines 28-45).

See teaches that emulsions can be lyophilized in the presence of cryopreservatives such as lactose to stabilize the emulsions and the contents (abstract, col. 6, line 57 through col. 7, line 8).

To prepare the emulsion of Lyons in a dry form using lactose as the solid support would have been obvious to one of ordinary skill in the art since such a procedure would stabilize the composition as taught by Kloveness, and See.

Applicant's arguments have been fully considered, but are not found to be persuasive. Applicant argues that there is no motivation to combine the references, which are non-analogous art (Page 8 of the response). The examiner disagrees since all the three references pertain to emulsions and liposomes which are micelles or emulsions in a continuous medium and therefore, analogous art and not non-analogous. Applicant's arguments that Lyons dos not teach the preparation of the composition in a dried form. The examiner agrees, but points out that both Kloveness and See teach the knowledge in the art of preparing the dried forms of the compositions using cryopreservatives such as disaccharides. In this context, the examiner regrets the error of using the word, McCarty; but the intent is clear that it refers to Lyons. Applicant's arguments that Lyons reference does not teach the use of various copolymers as carriers which themselves will emulsify upon hydration are not persuasive as discussed above.

Applicant's arguments that Klaveness teaches naphthalene emulsions are not persuasive since Klaveness is combined for its teachings of lyophilization of emulsions in the presence of sugars and one would expect similar lyophilization results, irrespective of the components and applicant has not shown that to be otherwise. Applicant's arguments that See teaches lyophilization of an emulsion comprising liposomal antigen, but silent regarding photosensitizers and a triblock copolymer. This argument is not persuasive since the rejection is made on the combination of the references and not just See alone.

6. Claims 1-10, 16-28 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lyons (5,616,342) in view of either Desai (6,074,666) or Madden (5,389,378) in further combination with Unger (6,028,066).

The teachings of Lyons have been discussed above. What are lacking in Lyons are the teachings of the preparation of the composition in a dried form in the presence of solid supports such as lactose and the use of claimed photosensitizers.

Desai discloses a method of preparation of lyophilized powders containing a phospholipid, a benzoporphyrins and lactose (endosupport) for photodynamic therapy (note columns 6-7, Examples and claims, claim 8 in particular).

Madden discloses a method of preparation of lyophilized powders containing a phospholipid, a benzoporphyrin and lactose (endosupport) for photodynamic therapy (note Examples). The formulations are enclosed in a capsule (exo-support).

Unger while disclosing the formulations containing liposomes and micelles for therapeutic and diagnostic purposes teaches that lyophilized compositions have advantage of greater shelf life and to prevent the agglutination as a result of lyophilization, additives such as glucose and trehalose are added (note the abstract, col. 4, lines 9-58 and col. 79, lines 45-57).

To include sugars such as lactose and trehalose and lyophilize the preparations of Lyons would have been obvious to one of ordinary skill in the art because Unger teaches that lyophilized compositions have advantage of greater shelf life and to prevent the agglutination as a result of lyophilization, additives such as glucose and trehalose and polymers such as PEG and polyvinyl pyrrolidone are added; the inclusion

of sugars would have also have been obvious to one of ordinary skill in the art since these are protective agents according to Madden and these are routinely added in freeze dried preparations containing photosensitizers according to Desai.

Applicant's arguments have been fully considered, but are not found to be persuasive. The examiner has already addressed applicant's arguments with regard to Lyons. Applicant argues that Unger only teaches the use of poloxamers as emulsion stabilizers and that Desai and Madden references are entirely silent regarding poloxamers are not persuasive since the references of Desai, Madden, and Unger are combined for their teachings of the preparation of lyophilized compositions using lactose support which is lacking in Lyons. The rejection is maintained.

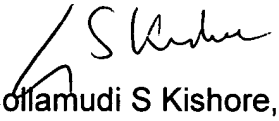
5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gollamudi S. Kishore, Ph.D whose telephone number is (571) 272-0598. The examiner can normally be reached on 6:30 AM- 4 PM, alternate Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thurman K. Page can be reached on (571) 272-0602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Gollamudi S Kishore, Ph.D
Primary Examiner
Art Unit 1615

GSK